What is claimed is:

1. A bridge device for expanding the number of addressable devices that can be connected to a communications bus, said devices using a predetermined protocol, said device comprising:

at least one parent bus port for coupling at least one host bus master over a parent bus, said bus master operable to utilize a layered communication protocol having bridge device addressing capabilities and addressing characteristics of said predetermined protocol included therein;

at least one child bus port for coupling to target devices over a child bus, said target devices adapted to communicate using said predetermined protocol;

a digital processor coupled to said parent bus port and said child bus port, said digital processor operable to implement a protocol translator, said protocol translator operable to translate messages in said layered protocol on said parent bus port to said predetermined protocol output at said child bus port and to translate messages received at said child bus port in said predetermined protocol to said layered protocol to be output from said child bus port.

2. The device of claim 1, wherein said protocol translator is operable to pass through a message in said layered protocol onto said child bus to another bridge device coupled to said child bus.

3. The device of Claim 1, wherein said predetermined protocol is an I^2C protocol.

4. The device of Claim 1, wherein a message to said bridge device in said layered protocol includes a bridge address field and a target device address field.

5. The device of Claim 1, wherein said layered protocol includes a read/write function indication to said target devices.

6. The device of Claim 5, wherein said bridge device returns a layered protocol message to said host bus master that includes a message field having data for a write command or a read count field for a read command.

7. The device of Claim 1, wherein said protocol translator includes a packet parser and dispatch mechanism for separating packets in said layered protocol and dispatching packets of said predetermined protocol over child bus.

8. The device of Claim 1, wherein a standard format message in said layered protocol includes a CRC field having a value based on other data included in said message, said device further including CRC generator and checker.

9. The device of Claim 8, wherein an I^2C address for said target devices is represented in said CRC value.

10. The device of Claim 8, wherein a host bus master can identify communications from a specific target device based on a tag field and a CRC value returned from said bridge device.

11. The device of Claim 1, further including a command collision detector for determining whether multiple host bus masters have commands pending on said parent bus.

12. The device of Claim 1, further including a special function command engine for receiving and processing special commands from said host bust master.

13. The device of Claim1, wherein said bridge device is a slave to said host bus master and a master of said child bus.

14. The device of Claim 1, wherein said bridge device provides isolation between said parent bus and said child bus.

15. The device of Claim 1, wherein said bus is a two-wire bus.

16. A bridge device for interfacing between a host bus master and target devices coupling to a two-wire electrical bus, said device comprising:

a first transceiver coupled to said host bus master over a parent bus, said host bus master utilizing a first communications protocol;

a second transceiver coupled to said target devices over a child bus, said target devices utilizing a second communications protocol, said first protocol having a bridge device address field for addressing said bridge devices and a target device address field for addressing said target devices coupled to said child bus, where the number of target devices addressable by said host bus master is expandable based on the number of bridge device coupled thereto; and

a protocol translator coupled to said first and second transceiver for translating communications in said first protocol destined for said target devices to said second protocol and translating communications in said second protocol destined for said bus master to said first protocol.

17. The device of claim 16, wherein said protocol translator is operable to pass through a message in said layered protocol onto said child bus to another bridge device coupled to said child bus.

18. The device of Claim 16, wherein said second protocol is an I^2C protocol.

19. The device of Claim 16, wherein said protocol translator includes a packet parser and dispatch mechanisms for separating packets in said first protocol and dispatching packets of said second protocol over child bus.

20. The device of Claim 16, wherein a standard format message in said first protocol includes a CRC field having a value based on other data included in said message, said device further including CRC generator and checker.

21. The device of Claim 16, further including a command collision detector for determining whether multiple host bus masters have commands pending on said parent bus.

22. The device of Claim16, wherein said bridge device is a slave to said host bus master and a master of said child bus.

23. The device of Claim 16, wherein said bridge device provides isolation between said parent bus and said child bus.

24. The device of Claim 20, wherein an I^2C address for said target devices is represented in said CRC value.

25. The device of Claim 20, wherein a host bus master can identify communications from a specific target device based on a tag field and a CRC value returned from said bridge device.

26. A method for expanding the number of addressable devices which use a given protocol that can be connected to a communications bus, said method comprising:

providing a bridge device having at least one parent bus port and at least one child bus port adapted for coupling, respectively, to a parent bus and a child bus;

coupling to at least one host bus master to said parent bus, said bus master operable to utilize a layered communication protocol having bridge device addressing capabilities and addressing characteristics of said given protocol included therein;

coupling to said child bus target devices assigned to said bridge device and adapted to communicate using said given protocol;

translating messages in said layered protocol received on said parent bus port to said given protocol to be output at said child bus port and translating messages received at said child bus port in said given protocol to said layered protocol to be output from said child bus port.

27. A system comprising:

at least one host bus master including a digital processor, said host bus master operable to utilize a first communications protocol for communicating over a parent bus; and

at least one bridge device including,

a first transceiver coupled to said host bus master over said parent bus, said host bus master utilizing a first communications protocol;

a second transceiver coupled to target devices over a child bus, said target devices utilizing a second communications protocol, said first protocol having a bridge device address field for addressing said bridge devices and a target device address field for addressing said target devices coupled to said child bus; and

a protocol translator coupled to said first and second transceiver for translating communications in said first protocol destined for said target devices to said second protocol and translating communications in said second protocol destined for said bus master to said first protocol.

28. The system of Claim 27 including at least two bridge devices coupled to said parent bus, said host bus master operable to use pairs of said bridge devices to verify data received from said target devices.